CLAIMS

WHAT IS CLAIMED IS:

1. A rotor for an electric motor, comprising:

a rotor core;

at least one end ring connected to the rotor core; and

at least one support sleeve attached to at least one end ring via an interference fit, wherein the support sleeve applies a compressive stress on the end ring.

2. The rotor of claim 1, wherein the support sleeve is made from a support sleeve material having a thermal characteristic that is the same as a thermal characteristic of an end ring material.

3. The rotor of claim 1, wherein the support sleeve material has at least the same mechanical strength than the end ring material.

4. The rotor of claim 3, wherein the support sleeve material and the end ring material are the same material, and wherein the support sleeve material is alloyed to have the higher mechanical strength.

5. The rotor of claim 1, wherein the support sleeve is attached to the end ring via an interference fit.

6. The rotor of claim 4, wherein a magnitude of the interference fit is between 0.1% and 0.5% of a nominal diameter of an interface between the end ring and the support sleeve.

7. The rotor of claim 1, wherein the support sleeve is made from one of the group consisting of aluminum, aluminum alloy, copper, copper alloy, nickel, nickel allow, titanium, and steel.

8. The rotor of claim 1, wherein an assembly stress applied to the end ring is less than a tensile yield strength of the support sleeve and the compressive strength of the end ring.

9. An electric motor, comprising:

an electromagnet that generates a magnetic field;

a rotor that rotates in the magnetic field, the rotor comprising

a rotor core having a first end and a second end,

first and second end rings connected to said first and second ends, respectively, of the rotor core, and

first and second support sleeves interference-fitted onto said first and second end rings, respectively, to apply a compressive stress on the first and second end rings,

wherein the support sleeve is made from a support sleeve material having a thermal characteristic that is the same as a thermal characteristic of an end ring material.

10. The electric motor of claim 9, wherein the support sleeve material has at least the same mechanical strength than the end ring material, and wherein the support sleeve material and the end ring material are the same material, and wherein the support sleeve material is alloyed to have the higher mechanical strength.

11. The electric motor of claim 9, wherein a magnitude of the interference fit is between 0.1% and 0.5% of a nominal diameter of an interface between the end ring and the support sleeve.

12 The electric motor of claim 9, wherein the support sleeve is made from one of the group consisting of aluminum, aluminum alloy, copper, copper alloy, nickel, nickel allow, titanium, and steel.

13. The electric motor of claim 9, wherein an assembly stress applied to the end ring is less than a tensile yield strength of the support sleeve and the compressive strength of the end ring.